REMARKS

Applicants appreciate the Examiner's careful review of the present application, and respectfully request reconsideration in light of the preceding amendments and the following remarks.

Claim Amendments/Status

By way of this reply, independent claims 1 and 7 have been amended to clarify the meaning of "nodes." Specifically, claims 1 and 7 now recite "the one or more deviation-expected paths are precalculated based on nodes and links connecting the nodes between the departure point and the destination, the nodes including non-intersections where two links meet as well as intersections where at least three links meet." This claim amendment finds solid support in Figs. 4 and 5A-5C and paragraphs 0041-0045 of the published specification. No new matter has been introduced through these amendments.

Rejection under 35 U.S.C. §103

Claims 1-5 and 7-11 stand rejected under 35 USC 102(b) as being anticipated by U.S. Patent No. 6,249,740 ("Ito"). Applicant respectfully traverses this rejection for at least the following reasons.

Amended independent claims 1 and 7 recite, *inter alia*, "storing the one or more deviation-expected paths in a memory *before* the mobile object deviates from the navigation path" and "the one or more deviation-expected paths are precalculated based on nodes and links connecting the nodes between the departure point and the destination, the nodes including *non-intersections* where two links meet as well as *intersections* where at least three links meet" (emphasis added).

Advantageously, according to embodiments of the claimed invention, one or more deviation-expected paths are precalculated and stored in the memory before the driver deviates from the original navigation path, and therefore the driver can be informed of a revised navigation path immediately based on the stored deviation-expected paths. Applicant notes that

in precalculating such deviation-expected paths, non-intersections connecting only two links (e.g., A5 in Fig. 4 and 5C), as well as intersections where more than two links meet (e.g., A1, A2, A3, and A4 in Fig. 4), are considered because they may also be necessary to provide the user with sufficient deviation-expected path data.

Ito relates to a communication navigation system where data is transmitted and received between a navigation base and a vehicle navigation apparatus. In order to reduce the amount of data to be transmitted between the navigation base and the vehicle navigation apparatus (*see* col. 2, ll. 60-63, col. 3, ll. 4-8, etc.), Ito suggests transmitting only the approved route (*see* col. 16, ll. 49-52) and the data on the surrounding areas of the departure point, course-change points of *intersections*, and destination (*see* col. 18, ll. 55-61). Referring to Fig. 4 of Ito, only the data on the approved route R1-R9 and the surrounding area A1-A4 of the departure point PD, course-change points C3 and C6 of *intersections*, and the destination PA is transmitted to the vehicle navigation apparatus. Ito, however, suggests *not* establishing surrounding areas and calculating deviation-expected paths with respect to non-intersections, as discussed, for example, in col. 12, line 50 – col. 13, lines 11 reproduced below:

> (2-4) Establishing Surrounding Area and Extracting Area Guidance Data
>
> Next, in the system control section 152, a counter "i" is set for the total number "n" of the course-change points obtained as described above (Step S5). Then, for each course-change point, a prescribed range which includes the course-change point is established as the surrounding area.
> For example, in FIG. 4, the surrounding area A1 is established around the intersection C3 which is the course-change point. Then, map data, road data and intersection data concerning the surrounding area A1 is extracted from the data base 153 (Step S6). A similar process is carried out for the intersection C6.
> Now, *in the case where the vehicle proceeds straight along a road, the absence of a map does not create any particular problems. However, because a course change such as turning right or left must be carried out at a course-change point, it is necessary to carry out guidance by displaying a map and a landscape and/or by voice instruction.* In such case, detailed route guidance data about the prescribed range around/including the course-change point is extracted from the data base 153. Hereinafter, such extracted data concerning the surrounding area is referred to the area guidance data.
> This process is carried out for all the course-change points (Steps S7 and S8), and the area guidance data concerning the surrounding area is stored in the working area of the system control section 152 together with data representing the surrounding area. (Emphasis added).

That is, Ito suggests not establishing surrounding areas with respect to (i) intersections that are not course-changing points and (ii) non-intersections. Thus, it is clear to one of ordinary skill in the art that in Ito, return routes are not calculated with respect to (i) such intersections that are not course-changing points and (ii) non-intersections, because Ito only considers calculating return routes in connection with the surrounding areas. As the Examiner asserts on page 6 of the instant Office Action, Ito's Second Modification is carried out between S61 and S62 of Fig. 12, which shows a process for establishing surrounding areas. In sum, Ito merely contemplates calculating return routes in the surrounding areas of course-changing intersections, but not in non-intersections.

Furthermore, Applicant respectfully submits that no concrete and particular deviation-expected paths are *pre*-calculated *before* deviation in Ito. In this regard, the Examiner indicates on page 6 of the instant Office Action that Ito discloses calculating deviation-expected paths in Second Modification. Applicants notes, however, that Ito describes a process of searching a return route performed by the navigation base apparatus 150 *after* deviation in col. 21, line 55 - col. 22, line 20-28, reproduced below

> In this second modification, in the case where the vehicle *has departed* from the searched route transmitted from the navigation base apparatus 150, return route data for returning the searched route is *extracted from the data base and then sent it to the vehicle navigation apparatus 100* to enable the driver of the vehicle to return the vehicle to the searched route. For example, in the case shown in FIG. 14, because the length L3 of the road R3 is smaller than the guidance start distance GL for the course-change point C3, the voice output section 107 outputs an audio guidance such as "Turn right at the next intersection" before the intersection C2. As a result, the driver of the vehicle may turn right at the intersection C2 by mistake. However, if such a mistake would occur, it is possible for the driver to return the vehicle to the searched route depending on the surrounding road conditions by providing guidance data for the return route (which would include map data for at least the roads Ra and Rb for the case shown in FIG. 14) to the vehicle navigation apparatus 100 as part of the route/guidance data. (Emphasis added).

Accordingly, in Ito, any return route calculated according to the above process needs to be transmitted from the navigation base apparatus to the vehicle navigation apparatus. As such, Ito does not discuss storing deviation-expected paths in a memory *before* deviation. Even assuming that Ito precalculates return routes before deviation, such return routes would be considered only

with respect to the surrounding areas of course-changing intersections. As discussed above, Ito suggests not considering non-intersections and intersections that are not course-changing points in establishing surrounding areas.

For the reasons stated above, Ito fails to teach or suggest at least "storing the one or more deviation-expected paths in a memory *before* the mobile object deviates from the navigation path" and "the one or more deviation-expected paths are precalculated based on nodes and links connecting the nodes between the departure point and the destination, the nodes including *non-intersections* where two links meet as well as intersections where at least three links meet," as required by independent claims 1 and 7.

Accordingly, independent claims 1 and 7 are patentable over Ito. Claims 2-5, 8-11 depend from claim 1 or 7, include further limitations, and are patentable over Ito for at least the reasons advanced above with respect to claim 1 or 7. Accordingly, withdrawal of this rejection is respectfully requested.

Conclusion

All objections and rejections having been addressed, it is respectfully submitted that the present application should be in condition for allowance and a Notice to that effect is earnestly solicited. Early issuance of a Notice of Allowance is courteously solicited.

The Examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application. To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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